Mr. Eggers has recently paid a visit to this country with a view of inducing some of the English advocates of an International Coinage to take part in the proposed conference. It was suggested by Mr. J. B. Smith, M.P., that a private meeting should be held to enable Mr. Eggers to explain his views, and this meeting was accordingly held on the 25th ult. at the Standards Office, 7, Old Palace Yard. But few persons, however, attended; amongst them were Dr. Leone Levi and Mr. Hendricks; Mr. J. B. Smith was himself absent from illness.

The principal propositions of Mr. Eggers, which seem to be fully explained in his printed pamphlet, entitled "Die Geldreform," published at Berlin, were—

1. That the International Coins should be of a round metric weight.
2. As common units of value, a dollar of fine gold $1\frac{1}{2}$ gramme, and a coin of 25 grammes of silver $\frac{9}{10}$ fine.
3. As nearly corresponding with the pound sterling, a coin of 5 dollars, or a new sovereign of $7\frac{1}{2}$ grammes of fine gold.

And he suggested that such a gold dollar and sovereign might be first introduced in Canada, as very nearly agreeing in value with the American gold coinage.

The objections raised against these propositions were, first, that if the fine gold in the dollar weighed $1\frac{1}{2}$ grammes, the addition of $\frac{1}{9}$ alloy would make the actual weight of the dollar $1\frac{2}{3}$ grammes, which is not a round metric weight. There would be the same result with the new sovereign of $7\frac{1}{2}$ grammes fine gold, as $\frac{1}{9}$ alloy would make the actual weight $8\frac{1}{3}$ grammes.

A far more serious objection was that the difference between the $7\frac{1}{2}$ gramme fine gold in the proposed new sovereign, and 7·32238 grammes in the existing sovereign, equal to 0·17762 grammes, would increase the value of the sovereign more than $5\frac{1}{2}$*d.*, which was quite inadmissible.

The question of a silver International Coin was not discussed, the general opinion being that the difficulties of agreeing upon a single gold unit were already sufficiently great, and that until they could be overcome, it was almost hopeless to expect that any International Coinage could be established. The adoption in the German Empire of the 20-mark piece as the gold coin unit, and containing 5·04*d.* less in value of fine gold than the sovereign, together with the very large amount of the new German gold coinage, appears to offer at the present time an insuperable obstacle to the common adoption of an International Coinage, however desirable it may be.

NOTES

AT the meeting of the Paris Academy of Sciences on the 7th instant, three elections to the Section of Anatomy and Zoology took place. The places to be filled were those of Mr. Agassiz, elected a Foreign Associate, and MM. Pictet and Pouchet, deceased. In the first case M. Steenstrup obtained 38 votes and Mr. Darwin 6; in the second Mr. Dana obtained 35 and Mr. Darwin 12; in the third Dr. Carpenter obtained 35, Mr. Darwin 12, and Mr. Huxley 1 vote. Messrs. Steenstrup, Dana, and Carpenter were therefore declared duly elected.

THE Professorship of Anatomy at King's College, London, rendered vacant by the death of Mr. Partridge, was refilled on Friday last by the appointment of Dr. Curnow, a former student of the College, whose medical career at the University of London has been one of the most brilliant on record. After having obtained the scholarships and gold medals in Anatomy and Materia Medica at the first M.B., he was equally successful at the second M.B., gaining the same honours in Medicine and Obstetric Medicine. At the M.D. examination Prof. Curnow also obtained the gold medal. We cannot but think that the Council of King's College have made a judicious selection, and have gracefully recognised talent in one of their most promising pupils.

THE Royal College of Science for Ireland, in connection with the Science and Art Department, South Kensington, has conferred the diploma of associate on the following gentlemen:—Faculty of Engineering: G. P. Culverwell, E. P. Culverwell, R. W. Frazer, and E. Barrington. Faculty of Manufactures: Thomas Abbott. The two Royal Scholarships were awarded to John O. Hicks and James Patterson. The silver medal to F. A. Caldwell.

"IT never rains but it pours." Prof. Agassiz, as representing the Anderson Natural History School, of Penikese Island, has been presented by Mr. C. W. Galloupe, of Swampscott, with a handsome yacht of 80 tons, estimated to cost 20,000 dollars. The vessel will be used for dredging, temperature soundings, &c., along the coast in the neighbourhood of the island; its presentation makes perfectly complete the apparatus for practically training the students of the finest natural history school in the world.

AMONG the "Innocents" slaughtered yesterday in the House of Commons we are sorry to notice the Weights and Measures (Metric System) Bill, which was withdrawn by Sir Thomas Bazley, in the absence of Mr. J. B. Smith. No notice had been given of this step, which naturally drew forth some protests.

THE Report of the College of Physical Science of Newcastle-upon-Tyne, at the end of the second year of its existence, is altogether satisfactory. The classes have been augmented from four to eleven, and the number of students shows a considerable increase over the previous session; the attendance at the evening classes is also satisfactory. The number of students attending instruction in practical chemistry has been so great as to render it necessary to make arrangements for materially increasing the laboratory accommodation. The Council are very sanguine of the success of the college, though they feel the necessity of founding more professorships and obtaining more accommodation, and think that the wealthy manufacturers and merchants of Newcastle and the North of England ought to render much more assistance than they do. We hope the wealthy manufacturers of the North will see it to be their duty, as it certainly is their interest to contribute to the success of such an institution in their midst. It would certainly be a disgrace to Newcastle if its Science College should, in the midst of enormous wealth, not attain the greatest possible measure of success. There is no reason why this institution should not be made as successful as Owens College, Manchester, and we hope that ere long similar institutions will be established in all the large towns of England. It would be a pity that those who are concerned in the management of the Newcastle institution should mar its success by any antiquated restrictions as to a knowledge of ancient languages by those who have shown themselves deserving of a degree in science.

WE regret to announce the death of the eminent engineer, Mr. J. R. McClean, M.P., F.R.S.

OUR readers have no doubt heard of the recent miserable thefts of living Italian coral from the Crystal Palace Aquarium. It is really difficult to find words to characterise the despicable meanness of the act. Mr. Lloyd says that these things are never taken when working people are present. Meantime the public must suffer for the act of an individual, for it has been thought necessary so to secure the corals under lock and key, that they cannot be so well seen as before, when in open tanks. We can only hope that the petty thief will be discovered; happily such acts are rare in our places of public resort.

A NEW part of the quarto "Transactions of the Zoological Society," just issued, contains three papers by Prof. Owen. The last of these is of special interest, as containing the first account of a new extinct Struthious form from Australia, proposed to be called *Dromornis australis*, for the full description of which we must refer our readers to the paper in question.

THE post tertiary fauna of Australia is extremely rich in *Macropodidæ*, or Kangaroo, many of which greatly exceed any of the existing species in size. Professor Owen has lately described a large series of these in a memoir presented to the Royal Society, and has divided them into numerous genera, founded upon somewhat minute distinctions in the characters of the teeth. We have just received from Mr. Gerard Krefft, Curator of the Sydney Museum, a photograph of the teeth of a giant of the race, the four molars together measuring from before backwards as much as three inches. It is unaccompanied by any description, and pending the publication of Prof. Owen's memoir, we are unable to say whether it belongs to either of the species described therein.

THE tank containing the Spring Lobster or Sea Crayfish, *Palinurus vulgaris*, at the Brighton Aquarium, No. 26, is invested with special interest at the present moment, on account of the appearance, during the last few days, of innumerable young. Until within late years, the early condition of this, the largest of our British crustacea, was regarded as a distinct species, allied to *Squilla*, representing the Stomapodous instead of the Podopthalmous order of their class; it was thus described by Leach under the name of *Phyllosoma commune*. The celebrated Belgian naturalist, Prof. Van Beneden, was one of the first to establish the identity of these two forms, and the result of his praiseworthy investigations was simply and amply confirmed by the recent arrivals at the Brighton tanks. In this "*Phyllosoma*" phase, the ovate body is so remarkably transparent and flattened out, that even when several inches in length they can scarcely be distinguished at the surface of the sea, where they often float in countless numbers. Some very fine examples of these crustacea, illustrating this interesting stage of their development, are exhibited in the typical invertebrate series in the Royal College of Surgeons. The specimens at the Brighton Aquarium just excluded from the egg are very minute, scarcely exceeding half-an-inch in total length, and although swarming in their tank are, on account of their extreme pellucidness, only visible on the most close inspection. The "berried hen" producing this large brood of young, was added to the collection about a month ago. An adjoining tank, No. 28, is teeming in a similar manner with the young of the Common Lobster, *Homarus vulgaris*.

THE number of the "Proceedings of the Asiatic Society of Bengal," containing a report of the annual meeting, has just been received. The chief feature of this meeting was the admirable address of the president, Dr. T. Oldham, from which we are glad to see that under the auspices of this Society, a very large amount of valuable work continues to be done to the literature, archæology, ethnology, and natural history of India. For years the Indian Government ignored the acknowledged claims which this Society had upon it, in return for the Society's handing over to Government its invaluable collection. It is gratifying to be told by the president that the Government of India have acceded in full to the claims of the Society. This gives us some hope that the Government, who have, the president tells us, sanctioned the necessary expenditure for photographic observations of the forthcoming Transit of Venus, will, as the Society desires, maintain and render permanent the small establishment about to be fixed for this object on some elevated spot, for the special purpose of solar observation in connection with meteorology. The British Association at its last meeting requested the Society to urge the Indian Government to establish and maintain an observatory for this purpose in India. The direct value, both to science and to commerce, of the work of such an observatory would be incalculable; and we hope the Society will continue importunate until the Government accede to its wishes. We are moreover glad to see that a committee of the Society has been organised to supplement the work of the *Challenger* by exploring the Indian seas, an almost virgin soil; the necessary funds for the purchase of instruments have been granted, and we hope the ship, which is all that is wanting, will be forthcoming when the instruments are ready. Altogether the Society must be congratulated on the work it does amid many discouragements.

TELEGRAPHIC intelligence has been received in Berlin announcing that the English steamer conveying the German African exploring expedition to Congo has been wrecked off Sierra Leone. There was no loss of life, but all the effects and scientific instruments of those on board were lost.

SHOCKS of earthquake occurred on the morning of July 12 at Rome, Frosinone, Alatri, and several other places. No damage was done. The shocks and subterranean roaring continue in the neighbourhood of Alpago. A rather strong shock of earthquake occurred on the same day in the Valley of Lira, at Isola. The workmen left the manufactories, and several houses were damaged.

MR. J. L. HADDEN, C.E., who was blinded by watching the electric light at Constantinople, is reported as having recovered.

ON June 15, according to the official journal of the Viceroyalty of Konieh, in Asia Minor, snow fell heavily on the mountain called Bulgardagh, in the Kaza of Erkeli. In some places the snow was five feet deep.

WE have already referred to the U.S. exploring expedition to Montana, in connection with the survey for the Northern Pacific Railroad. The correspondent of the *New York Tribune*, writing from Fort Rice in the Upper Missouri, near a newly-founded town called Bismarck, gives details concerning the organisation of the expedition, which was expected to set out from Fort Rice at the end of June. There is a large military escort as a protection against the Indians, and the scientific party is well equipped. It is expected that the waggons which carry out supplies will return loaded with specimens of the natural products of the region, especially of the Yellowstone Basin, to be arranged systematically, and deposited in the National Museum of the United States. The results of this expedition, so liberally fitted out by the American Government, are likely to be of great service to science.

THE *Times of India* contains an account of the death of a huge boa-constrictor which infested some marshy ground at the foot of the hills near Poodoocottah. The animal was regarded as sacred by the natives, who would not molest it, although only on the morning when Dr. Johnstone and Mr. Pennington, with great danger to themselves, bravely hunted it up and shot it, it had swallowed a young child. The animal is about 21 feet long, and its stuffed skin is to be deposited in the Madras Museum.

As might be expected, Mr. G. J. Symons' "British Rainfall for 1872," considering the unusual wetness of the year, is of great interest to meteorologists. The author deserves great credit for the immense trouble he has taken in putting together in a handy and useful form such a multitude of statistics, and the great care he appears to have taken to secure accuracy. The greatest rainfall in the three kingdoms during 1872 occurred at The Stye in Cumberland, 1,077 ft. above the sea-level, where it reached the extraordinary amount of 243·98 in.; the smallest amount was at Silsoe in Bedfordshire, where it was only 26·18 in., unusually small as compared with most other places. The volume, besides rainfall statistics, contains much that is of interest to meteorologists, including some statements on the supposed connection between rainfall and sunspot frequency, that are worthy of attention.

"THE U.S. Sanitary Commission in the Valley of the Mississippi during the War of the Rebellion, 1861—1866," is the title of a very interesting volume, giving a detailed account of the organisation and working of this benevolent commission during the American civil war. It seems to have been on the whole well organised and successful in carrying out its object, thus doing much to alleviate the miseries of that unfortunate war.

MR. FREDERICK AYRTON, barrister-at-law, long resident at Cairo, who died in London recently, has bequeathed to the British Museum a splendid library of caligraphic writings in Arabic, Persian, and Turkish, collected during many years' residence in Egypt, and the market value of which probably exceeds 3,000*l.* Mr. F. Ayrton was a perfect connoisseur in the Oriental science of caligraphy, of which so little is known, artistically, in Europe; and he devoted time and money, without stint, to this his favourite study. His collection is, perhaps, unrivalled in Europe. The gift is made on condition that the trustees set apart a room in the Museum for the exhibition of these specimens of Oriental caligraphy, and that Mr. Ayrton's Arabic scribe, Asaád Effendy, be engaged for three or four years, at a salary of 100*l.* per annum, to draw up a catalogue *raisonné* of the contents of each series.

"LES Richesses Naturelles du Globe à l'Exposition Universelle de Vienne," by M. Bernardin, is the title of a short pamphlet called forth by the Vienna Exhibition, the author's object being to show that most of the industrial materials obtained from the animal, vegetable, and mineral kingdoms within the last forty years have been lighted upon by chance, and that if competent men were to make a thorough investigation of the subject, Nature might be made to contribute to industry a vastly greater amount of material than she at present does.

WE learn from Trübner's *Literary Record* that M. Alphonse Pinart has just published a catalogue containing a description of the different collections made during his stay in what was formerly Russian America (Alaska), brought to Europe, and is now exhibiting in one of the galleries of the Museum of Natural History, Paris. The collection comprises objects of Natural History in general, Palæontology, Conchology, and especially a rich collection of objects of high ethnographical interest, as costumes, tools, arms, &c., used by the aborigines of Alaska.

WE are indebted to *Iron* for the following:—During the recent building of a bridge in Holland one of the traverses, 465 feet long, was misplaced on the supports. It was an inch out of line, and the problem was how to move it. Experiment proved that the ironwork expanded a small fraction of an inch for every degree of heat it received. It was noticed that the day and night temperature differed by about 25°, and it was thought this might be made to move the bridge. In the morning the end out of place was bolted down securely, and the other end left free. In the heat of the sun the iron expanded, and towards night the free end was bolted down, and the opposite end was loosened. The contraction then dragged the whole thing the other way. For two days this experiment was repeated, till the desired place was reached. We find no record that the heat of the sun has ever been employed in this way before.

THE following is from *Ocean Highways*:—During the last three years a naval party, commanded by Lieutenant Simpson, has been employed by the Chilian Government to explore the western side of Patagonia. In November and December 1871, Lieutenant Simpson, whose narrative has only just been published, ascended the river Ayson, which falls into the sea in latitude 45° 20′ S., opposite the Chinos Archipelago, to the south of Chiloe. He soon came to rapids and waterfalls which stopped his boats, but he pressed on through the forest in pouring rain on foot, and crossed the Cordillera at a point where it has never before been visited. The country had no inhabitants, but it is well wooded, and signs of coal were found.

No. 5 of the "Lecture Extras" of the *New York Tribune*, contains seven lectures with numerous woodcut illustrations. The principal lectures are, "Sound and Hearing," "Voice and Speech," and The Explanation of Musical Harmony," by Prof. Elsberg, of the University Medical College, New York, "Deep Placer Mining in California," by Prof. Benjamin Silliman, of Yale College, and "The Seven Senses," by Dr. R. W. Raymond, U.S. Mining Commissioner.

ADDITIONS to the Brighton Aquarium during the past week:—3 Green Turtle (*Chelonia viridis*), 4 Green Lizards (*Lacerta viridis*), 45 Mackerel (*Scomber scomber*), 3 Sea-trout (*Salmo trutta*), 4 Bass (*Labrax lupus*), 8 Black Bream (*Cantharus lineatus*), 3 Shad (*Clupea Alosa*) 1 Scad (*Trachurus trachurus*) 2 Octopus (*O. vulgaris*), 2 bunches of spawn of Squid (*Loligo vulgaris*), a brood of young Lobsters (*Homarus vulgaris*), hatched in tank No. 28.

THE additions to the Zoological Society's Gardens during the past week include a Mississippi Alligator (*Alligator mississippiensis*) from New Orleans, presented by Mr. John Hanley; four blossom-headed Parrakeets (*Palæornis cyanocephala*) and an Alexandrine Parrakeet (*P. alexandri*) from India, presented by Mr. Hugh Nevill; six Zenaida Doves (*Zenaida amabilis*) from the West Indies, presented by the Right Rev. Dr. Stirling; a Tabuan Parrakeet (*Pyrrhulopsis tabuensis*) from the Feejee Islands, and a Wagler's Conure (*Conurus wagleri*) from Venezuela, both new to the collection; an Eland (*Oreas canna*) from South Africa, purchased; two Crested Porcupines (*Hystrix cristata*) born in the Gardens.

*ON THE GERM THEORY OF PUTREFACTION AND OTHER FERMENTATIVE CHANGES.**

II.

THE author next proceeded to describe and illustrate, by diagrams enlarged from camera lucida sketches, some of the variations he had observed in organisms found in the milk glasses when introduced into other media. Another unnamed species of Oidium closely allied to that before referred to, and like it operating as a putrefactive ferment upon urine, was seen to present strange varieties according to the fluid in which it grew and the length of time it remained in it; yet, when placed in boiled milk, it returned to exactly the same character which it had when in the flask of unboiled milk in which it was first observed. But still more remarkable modifications were seen among the Bacteria. One species of very large size, but of ordinary form and movements, as seen first in the milk, presented the following, among other varieties. In Pasteur's solution it grew as motionless algoid threads with nucleated segments. In urine and turnip infusion it did not grow at all, nor did it in the albuminous fluid till boiled and cooled solution of sugar of milk had been added, when it returned to its original Bacteric form at first, but afterwards assumed the characters of a toruloid organism. In boiled milk it resumed the original Bacteric character, but, after seven weeks, the Bacteria had changed from very large to excessively minute ones.

Another species, seen in the first instance in milk, as about the most minute form of Bacterium the author had ever observed, grew in Pasteur's solution as an ordinary full-sized Bacterium; but in urine it assumed the unjointed and cork-screw shape, and the spiral movements of a Spirillum. In turnip infusion it grew with extreme rapidity as an ordinary double-rod-like moving Bacterium, but after remaining some weeks in that medium it assumed a remarkable fungoid character with greatly increased

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* Continued from p. 214.